5.19 SOLID WASTE AND HAZARDOUS MATERIALS

This section discusses the impacts of solid waste and hazardous materials for the No Action and Build Alternatives. Solid waste is any garbage or refuse, sludge from wastewater treatment facility, water supply treatment facility, or air pollution control facility, and other discarded materials, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities.[1]

FAA Order 1050.1E defines hazardous material as any substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The term hazardous material includes hazardous substances and hazardous waste. In addition, 1050.1E defines hazardous waste as being a waste, under the Resource Conservation and Recovery Act (RCRA) that is listed in, or meets the characteristics described in 40 CFR Part 261, including ignitability, corrosivity, reactivity, or toxicity. Finally, 1050.1E defines hazardous substance as any element, compound, mixture, solution, or substance defined as a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and listed in 40 CFR Part 302. If released into the environment, hazardous substances may pose substantial harm to human health or the environment.

5.19.1 Background and Methodology

5.19.1.1 Regulatory Context

In accordance with FAA Order 5050.4A, *Airport Environmental Handbook*, and 1050.1E, *Environmental Impacts: Policies and Procedures*, the impacts to solid waste collection, control, and disposal must be assessed. Because the disruption of sites containing hazardous materials or environmental contamination can have impacts on soils, surface water, groundwater, and air quality, this section also provides an overview of potential impacts and actions to be taken to avoid them.

FAA Order 1050.1E (Appendix A, 10.1a) states:

> Four primary laws have been passed governing the handling and disposal of hazardous materials, chemicals, substances, and wastes. The two statutes of most importance to the FAA in proposing actions to construct and operate facilities and navigational aids are the *Resource Conservation and Recovery Act of 1990* (RCRA) (as amended by the *Federal Facilities Compliance Act of 1992*) and the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), as amended by the *Superfund Amendments and Reauthorization Act of 1986* (SARA or Superfund) and the *Community Environmental Response Facilitation Act of 1992*. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

[1] RCRA 42 U.S.C. Section 6903(27).

In addition, the FAA must also consider the *Pollution Prevention Act of 1990* and the *Toxic Substances Control Act of 1976*, as amended. The Pollution Prevention Act focuses industry, government, and public attention on reducing the amount of pollution through cost-effective changes in production, operation, and raw materials use. The Toxic Substances Control Act of 1976 allows the U.S. Environmental Protection Agency (USEPA) to track the 75,000 industrial chemicals currently produced or imported into the United States. Additionally, there are three executive orders that concern solid waste and hazardous materials. Executive Order 12088, *Federal Compliance with Pollution Control Standards* was enacted to ensure Federal compliance with applicable pollution control standards in the prevention, control, and abatement of environmental pollution; and consult with the USEPA, State, interstate and local agencies concerning the best techniques and methods available for the prevention, control and abatement of environmental pollution. Executive Order 12856, *Federal Compliance with Right–to-Know Laws and Pollution Prevention Requirements*, ensures that Federal agencies provide the public with information on hazardous and toxic chemicals in their communities, establish emergency planning and notification requirements to protect the public in the event of a release of an extremely hazardous substance, and establish a program to reduce the use of toxic chemicals and prevent the generation of pollution. Executive Order 12580, *Superfund Implementation*, as amended by Executive Orders 13308, 13016 and 12777, delegates to various Federal officials the responsibilities vested in the President for implementing the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

5.19.1.2 Thresholds of Significance

According to FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, generally, additional information or analysis is needed only if problems are anticipated with respect to meeting the applicable local, State, Tribal, or Federal laws and regulations on hazardous or solid waste management.

5.19.1.3 Methodologies

The amount of solid waste generated by the alternatives is based upon available studies and surveys completed by the City of Chicago Department of Aviation (DOA) in direct comparison to the number of enplaned passengers. Additionally, impacts of the alternatives are identified as being in the form of construction, demolition and land clearing waste (CDL) and general waste after the completion of construction.

Since there is a direct relationship between enplaned passengers and the amount of solid waste generated, as passengers increase solid waste would also proportionally increase. Therefore, the ratio of existing solid waste to existing enplaned passengers was used to project future solid waste generation.

Hazardous waste and substances were identified by inventorying all of the hazardous sites identified by the USEPA under regulations such as RCRA and CERCLA. Additionally, all

above and underground storage tanks were inventoried. The inventory includes such information as location, active or inactive, and substance contained.

5.19.2 Baseline Conditions

The USEPA defines solid waste as any garbage or refuse, sludge from wastewater treatment facility, water supply treatment facility, or air pollution control facility, and other discarded materials, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities.[2] Solid waste at O'Hare is primarily composed of solid and semi-solid waste such as garbage, rubbish, metal, paper, plastic, and wood. These waste materials are generated by a wide variety of sources including airline passengers, aircraft operations, Airport tenant operations, and construction activity.

Congress enacted RCRA in 1976 to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. Although the USEPA has delegated authority to administer and enforce RCRA to the State of Illinois, USEPA does retain some regulatory authority over RCRA in Illinois.

In addition, Illinois statutes that pertain to solid waste are the Environmental Protection Act (415 ILCS 5), Illinois Solid Waste Management Act (415 ILCS 20), the Local Solid Waste Disposal Act (415 ILCS 10), and the Solid Waste Planning and Recycling Act (415 ILCS 15).

International waste management practices are included in the U.S. Department of Agriculture (USDA) Airport and Maritime Operations Manual[3] (which implements USDA regulations 9 CFR 94.5 and 7 CFR 330.400).

Some of the materials and waste can be hazardous to humans or the environment or require special handling. Activities that require the use of hazardous materials and the generation of hazardous waste at O'Hare include aircraft fueling operations, aircraft maintenance, and other activities associated with aircraft operations.

5.19.2.1 Existing Airport Generated Solid Waste

Solid waste collection and disposal services for O'Hare are currently provided under contract with Waste Management, Inc. (WMX). WMX provides solid waste receptacles and collection containers, ranging in size from four to over thirty-cubic yards capacity, and are provided for airlines, parking garages, the main terminal, concourses, etc. Solid waste collection occurs seven days a week at the Airport.

In 1999, it was estimated that 25 percent of the solid waste generated at the Airport was attributed to terminal users (such as passengers and concessions), 56 percent to flight kitchens, 8 percent to maintenance, and 11 percent to cargo operations. Solid waste generation for 2000,

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[2] RCRA 42 U.S.C. Section 6903(27).
[3] Airport and Maritime Operations Manual, 3rd Edition, United States Department of Agriculture, January 31, 2000.

2001, and 2002 was not significantly different from 1999.[4] In the 2002 Baseline, there were over 31 million enplanements,[5] generating 11,500 tons[6] of solid waste at the Airport.

Construction and demolition wastes generated from development projects at the Airport are either discarded at an area landfill or, depending on the type of debris, used on the airfield. For example, 2.6 million-cubic yards of soil have recently been excavated as part of the construction projects for the Touhy Avenue Detention Basin and Structure 140 in the North Airfield. All clean fill from the Touhy Avenue Detention Basin project was moved to the Bureau of Forestry site located at the southwest corner of the Airport.[7] Other uses of clean fill include stabilizing construction areas on the Airport and movement to selected off-site locations. In the past, clean fill dirt was used to construct two earthen berms on the southwest side of the Airport, which were constructed in an effort to reduce ground-based aircraft noise in communities directly adjacent to O'Hare.

Currently, about 25 percent of wastes generated by the Airport are recycled under a program initiated by the City in 1994.[8] The recycling program was initiated because of the high volume of solid waste, such as glass bottles and jars, aluminum cans, paper, and corrugated cardboard that was being generated at the flight kitchens and terminal areas.

International wastes resulting from aircraft operations originating in foreign countries are subject to specific handling procedures before being processed for recycling or sent to landfills. These wastes must go through a sterilization process, which can include heating the waste to a specific temperature.[9] In the past, international waste was sent to an incinerator in Robbins, Illinois. Currently, international waste is shipped to Indianapolis, Indiana, to be sterilized and then disposed of accordingly.

5.19.2.2 Regional/Local Solid Waste Handling

The Airport is located in the Chicago Metropolitan Region of the IEPA Reporting Region. Cook, DuPage, Grundy, Kane, Kankakee, Kendall, Lake, McHenry, and Will counties are located in the Chicago Metropolitan Region 2 of the IEPA Reporting Region.[10] In 2002, Region 2 had 11 active solid waste landfills. By the end of 2002, the total number of active landfills in the region was reduced by one (Woodland RDF). **Table 5.19-1** provides information on remaining capacity and estimated remaining life of each landfill located in Region 2.

All solid waste from the Airport that is not recycled is transported to one of two landfills. Most is transferred to Countryside Landfill in Grayslake, Illinois, which is expected to continue

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4 Telephone conversation between Amy Hanson, Landrum & Brown, and Ron Kovar, Waste Management, January 22, 2003.
5 Summary of Annual Enplaned Passengers ORD EIS Forecasts, Leigh Fisher Associates, FAA Terminal Area Forecast, and U.S. DOT Data, May 2004.
6 Waste Management Survey for Chicago O'Hare International Airport, City of Chicago Department of Aviation, Prepared by Weston Solutions, Inc. October 29, 2003.
7 Correspondence between Richard Hyde, City of Chicago DOA and T.J. Parker, CTE, Inc. April 3, 2001.
8 Draft Technical Working Report (Solid Waste), City of Chicago, September 27, 2004.
9 Airport and Maritime Operations Manual, 3rd Edition, United States Department of Agriculture, January 31, 2000.
10 IEPA Reporting Region 2 includes Cook, DuPage, Grundy, Kane, Kankakee, Kendall, Lake, McHenry, and Will Co.

operating until 2016, the longest life expectancy of the two landfills. The remainder is transferred to Settlers Hill Recycling and Disposal Facility in Batavia. The closer of the two landfills is Settler's Hill, located 39 (statute) miles from the Airport.

TABLE 5.19-1
LANDFILLS: WASTE ACCEPTED 2002, REMAINING CAPACITIES JANUARY 1, 2003

Landfill	Municipality	County	Wastes		Remaining Capacity		Disposal Area Acres	Close Year
			Cu. Yds.	Rank(a)	Cu. Yds.	Rank(b)		
CDT Landfill Corp. Exp. Site(c)	Joliet	Will	0	N / A	0	52	48.0	2000
CID RDF#3 & #4	Chicago	Cook	1,038,830	12	525,000	46	202.0	2005
Countryside Landfill	Grayslake	Lake	1,803,372	9	23,711,000	7	153.0	2016
Environtech Landfill	Morris	Grundy	1,835,948	8	5,266,000	30	78.0	2013
Kankakee RDF	Chebanse	Kankakee	373,956	31	1,063,000	39	55.0	2005
Laraway RDF	Elwood	Will	65,819	48	60,000	50	32.2	2004
Mallard Lake Landfill(d)	Hanover Park	DuPage	0	N / A	0	52	230.0	1999
Morris Community Landfill	Morris	Grundy	87,426	46	589,000	44	95.0	2010
Onyx Zion Landfill	Zion	Lake	2,463,544	7	22,337,000	8	131.2	2012
River Bend Prairie Landfill	Dolton	Cook	620,753	24	7,517,000	24	55.0	2015
Settler's Hill RDF	Batavia	Kane	4,299,246	3	12,448,000	15	197.0	2006
Sexton #2	Hillside	Cook	452,925	28	715,000	43	55.0	2004
Wheatland Prairie RDF(e)	Plainfield	Will	0	N / A	0	52	98.0	2001
Woodland RDF(f)	South Elgin	Kane	928,610	15	0	52	103.0	2002
Total			**13,970,429**		**74,231,000**			

CID = Calumet Industrial District
RDF = Regional Disposal Facility
NA = Not Applicable
Notes: (a) Standing among 51 landfills that accepted wastes during 2002.
(b) Standing among 51 landfills that reported capacity as of January 1, 2003.
(c) Ceased accepting waste June 9, 2000 or June 18, 2001; Certificate of Closure is pending.
(d) Ceased accepting waste March 13, 1999; certified closed as of September 30, 2002.
(e) Ceased accepting waste in June 2001; certified closed as of September 19, 2002.
(f) Ceased accepting waste November 5, 2002; Certificate of Closure is pending.
Source: Nonhazardous Solid Waste Management and Landfill Capacity in Illinois, 2002 Annual Report, IEPA / BOL / 03-014 Illinois Protection Agency, October 2003.

FAA guidelines recommend that landfills not be located near airports because of birdstrike concerns. Waste disposal sites are considered incompatible if located within 10,000 feet of any runway end used or planned to be used by turbine aircraft or located within a five-mile radius of a runway that attracts or sustains hazardous bird movement into, or across the runway and/or approach and departure patterns of aircraft.[11] A waiver can be obtained if it is proven

[11] Waste Disposal Sites On or Near Airports, Order 5200.5A, Federal Aviation Administration, January 31, 1990.

that there is no birdstrike potential. No existing or planned landfills are located within these distances of O'Hare.

5.19.2.3 Storage and Use of Hazardous Substances at the Airport

Hazardous waste is defined by FAA Order 1050.1E as waste that is listed in 40 CFR Part 261, or is flammable, corrosive, explosive in reaction, or toxic to humans and animal life. Hazardous wastes include cleaning solvents, waste oil and Freon, oil booms contaminated with toluene, gasoline, gas-soaked rags, and polychlorinated biphenyls (PCBs). Other wastes of concern include paint-related waste, runway rubber, antifreeze and urea, sand blast residue, household hazardous waste (small quantities of various hazardous materials that cannot be combined with other materials for disposal), and ethylene glycol.

Aircraft operations require storage and use of fuel, deicing agents, and other hazardous materials. Although hazardous wastes are not disposed of at the Airport, handling of hazardous materials in the vicinity of an airport is common. Hazardous materials are stored in aboveground storage tanks (ASTs), underground storage tanks (USTs), warehouses, and other storage buildings located on or near Airport property. The ground support for aircraft operations can create the potential for accidental releases of these substances, resulting in the potential for adverse environmental impacts. This section presents a summary of known and potential use, storage, and distribution of hazardous materials and waste sites on Airport property and within close proximity to the Airport. **Appendix O**, **Solid and Hazardous Waste**, presents the detail concerning known hazardous waste sites.

5.19.2.4 Former Military Property

The former military property, located on the northeast portion of Airport property, was decommissioned in 1996 and is in the process of being acquired by the City from the U.S. Department of Defense.[12] The City currently has a lease on the property. Once the U.S. Air Force completes remediation activities and all reporting requirements, the deeds to the property will be transferred to the City. Until the Finding of Suitability to Transfer (FOST) is issued, the City will coordinate with the U.S. Air Force while planning any subsurface activities on the former military property. The "O'Hare Air Reserve Facilities" (a portion of the former military property) is listed in the CERCLIS database. CERCLIS is defined below in **Section 5.19.2.7, Release of Hazardous Substances**.

5.19.2.5 Underground Storage Tanks

Many UST systems on the Airport contain petroleum-based products or other hazardous chemicals. In 2003, 170 USTs were located on the Airport property, of which 139 are still in use (see **Table O-1 in Appendix O**.) Twelve USTs are abandoned or filled with inert material and

[12] Federal Facility Site Information O'Hare Naval Reserve Station, U.S. EPA, August 5, 2003, http://www.epa.gov/swerffrr/ff/ohareNRS.htm/

19 are inactive or out of use.[13] **Exhibit 5.19-1** indicates where USTs are located on Airport grounds. See **Table O-2** for a complete list of all active and inactive USTs at the Airport and **Table O-3** in **Appendix O**, for a list of all ASTs at the Airport.

[13] Email from Kelly O'Connell, MACTEC Engineering and Consulting, to Erik Ramirez, Landrum & Brown, Re: 2002 Status of USTs on ORD Property, December 3, 2002.

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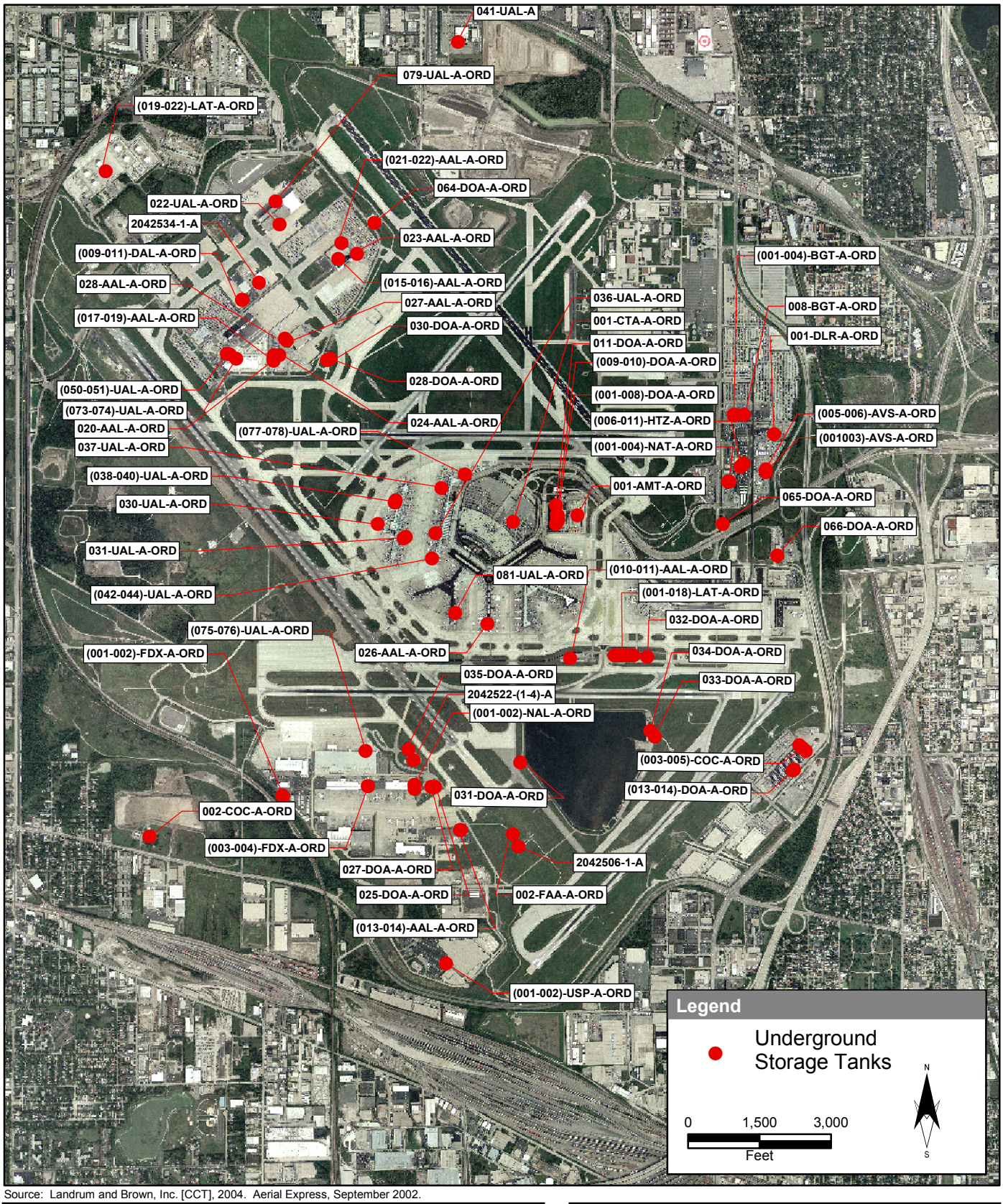

Source: Landrum and Brown, Inc. [CCT], 2004. Aerial Express, September 2002.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Location of Active Underground Storage Tanks

▶ **Exhibit 5.19-1**

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A management program has been implemented by the Airport to monitor general procedures regarding USTs. The key objectives of this management program are as follows:

- Provide adequate maintenance of fuel storage and hydrant delivery systems;
- Protect human health and the environment; and
- Comply with Federal, state, and local regulations.

If any UST must be removed or abandoned, that activity takes place in compliance with the Airport's management program, Illinois Title 41 Part 170 (Storage, Transportation, Sale and Use of Petroleum and Other Regulated Substances), Illinois Title 35 Subtitle G Chapter 1 Subchapter D (Underground Injection Control and Underground Storage Tank Programs), and 40 CFR Part 280.

5.19.2.6 Diseased Plant Material

While not a hazardous waste issue, trees infected with Dutch elm disease were buried at various locations at the Airport (circa 1960-1969). If these non-hazardous waste materials are encountered during construction of any proposed improvements at O'Hare, including the proposed modernization program, they will be separated and removed for disposal.

5.19.2.7 Release of Hazardous Substances

The USEPA has established a database of sites where releases of hazardous substances have been reported. This database is called the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). A review of available CERCLIS and IEPA data for the construction impact area (zip codes 60666, 60018, 60176, 60131, 60106, and 60007) revealed sites involving past, current, and potential releases to the environment of hazardous substances.[14] Sites on or near the Airport are listed in **Table O-4,** in **Appendix O**, **Solid and Hazardous Waste**.

CERCLA, commonly known as Superfund, provides broad Federal authority to respond directly to releases or threatened releases of hazardous substances. CERCLA created prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. It authorizes two types of response actions: short-term removals (actions taken to address releases or threatened releases) and long-term remedial response actions (can only be conducted at sites listed on the USEPA's National Priorities List).

The "O'Hare Air Reserve Facilities" (a portion of the former military property) is listed in the CERCLIS database. A USEPA Funded/Financed Discovery (a preliminary process for an environmental evaluation) was completed for the site on June 1, 1984, and an IEPA

[14] Superfund (CERCLIS), U.S. Environmental Protection Agency, January 2003; Site Remediation Program (SRP) Listing, Illinois, Environmental Protection Agency, January 2003; and Leaking Underground Storage Tank (LUST) Listing, Illinois Environmental Protection Agency, January 2003.

Funded/Financed Preliminary Assessment (an environmental evaluation) was completed on September 1, 1984, with the qualifier of "No Further Remedial Action Planned" (NFRAP). This site is in the process of site characterization and remediation. The U.S. Air Force will complete all associated activities before the title to the land is transferred to the City of Chicago.

The IEPA has established a list of sites that have been entered into the Site Remediation Program (SRP). Sites on or near the Airport included on the list are based on reports received by the IEPA. This list can be found in **Table O-5,** in **Appendix O**, **Solid and Hazardous Waste**. The SRP section of the IEPA Bureau of Land oversees the remedial activities after releases that do not apply to the leaking underground storage tank (LUST) program and have been reported to the Illinois Emergency Management Agency (IEMA). The SRP section reviews the technical adequacy of site classification plans and reports, groundwater monitoring plans and reports, corrective action plans and reports, and associated budgets. Once a site has met its remediation objectives and program requirements, the IEPA issues a No Further Remediation (NFR) letter for the SRP incident. A "Non-SRP Determination" letter may also be issued if the reported release does not correspond to the jurisdiction of the IEPA SRP section.

The IEPA has also established a list of LUSTs that have been reported to the State. Sites on or near the Airport included on the list are based on reports of releases received by the IEPA. This list can be found in **Table O-6** in **Appendix O**. However, the IEPA list does not constitute a confirmation that a release has actually occurred at these sites. Under Illinois law, as described in the regulations at 35 IAC Part 732, such confirmation, as well as any related reporting, sampling, sample analysis, and remediation, are the responsibility of the site owner or operator. A majority of such sites on the Airport property have participated in the IEPA LUST Program and are either in the process of remediation or have received an NFR letter.

There have been spills of hazardous materials recorded for the Airport. **Table O-7** in **Appendix O** lists spills of hazardous materials that occurred between January 1, 2001, and December 31, 2001. Records for hazardous spills at the Airport for 2002 and 2003 were also reviewed,[15] however, the number of spills reported for those years were less than in 2001. O'Hare utilizes Best Management Practices (BMPs) regarding spill control kits and spill response actions. The practice for spill control and clean-up at O'Hare can be found in the BMP manual (see **Appendix Q, Construction)**, which is incorporated in the Airport's SPCC Plan.

A subsurface soil gas investigation and review of IEPA records performed by the Illinois State Geological Survey, in conjunction with the Illinois Department of Transportation, for the planned I-190 improvements documented potential hydrocarbon and PCB contamination within the upper nine feet of soil strata in areas surrounding current and planned roadways.[16] Many of these areas were formerly or are currently occupied by facilities with USTs, ASTs, and electrical transformers, which may have been potential sources for subsurface contamination.

[15] Chicago Department of Aviation, Operations Department and Environment Department, Reported spills data extracted from Electronic Log System, January 2002 through December 2003.

[16] Preliminary Environmental Site Assessment, FAI 190 (I-190), O'Hare to Cumberland Avenue, Illinois State Geological Survey, August 31, 2000.

5.19.2.8 City of Chicago Operations

The City of Chicago, in its operation of O'Hare, stores and uses hazardous materials. Hazardous materials used by the City are stored in USTs, ASTs, tanker trucks, drums, and containers. Sites where hazardous materials are used or stored include the Aircraft Rescue and Firefighting Facility (ARFF), the vehicle maintenance complex, the aviation maintenance complex, the former military site, and the heating and refrigeration building. The types of hazardous materials stored near these facilities are gasoline, diesel fuel, waste oil, heating oil, and glycol, each of which is stored in USTs and ASTs. See **Table O-3** in **Appendix O, Solid and Hazardous Waste** for a list of all ASTs at the airport.

5.19.2.9 Airport Tenant Operations

Several tenants located at O'Hare also use hazardous materials in day-to-day operations. These tenants include rental car agencies such as Hertz, Dollar, Avis, Budget, and National. Other major tenants include the FAA; various airlines (United, American, Delta, Northwest, Continental, and TransWorld); Airport Group International (AGI), the main supplier of JetA fuel; and several other Airport users.

The materials used by Airport tenants include various types of fuels, solvents, paints, and other materials. Many of these Airport tenants store these hazardous materials in USTs, ASTs, tanker trucks, drums, and containers. Currently, there are eight, 2.81 million-gallon ASTs used to store JetA fuel, which are owned and maintained by AGI. **Exhibit 5.19-2** shows where all JetA fuel storage locations are on the Airport. Fuel for aircraft operations is delivered to tenants through an underground direct feed line that is pumped from the storage tanks near the airline maintenance area through the super satellite farm. Fuel is then distributed to the hydrant systems located at the Airport tenant gates and to the South Cargo Area. Currently, 80 percent of the existing gates have hydrant fueling, and the Airport plans to include hydrant fueling at all new gates. The super satellite farm also acts as a filling station for fuel trucks, which service aircraft that do not utilize the hydrant system. Plans for upgrading this system include adding an additional 2.8 million-gallon tank and increasing the width of the direct feed line. Additional and upgraded pumps at the main fuel farm will complement the new fuel line. This will allow the super satellite farm to be removed. Construction on this project has not yet started.

A number of existing structures occupy the former military property located on the northeast portion of Airport property. This site was decommissioned in 1996, and is in the process of being acquired by the City. The City currently has a lease on the property. Once the U.S. Air Force completes remediation activities and all reporting requirements, the deeds to the property will be transferred to the City. The "O'Hare Air Reserve Facilities" is listed in the CERCLIS database and is discussed further in **Section 5.19.2.7, Release of Hazardous Substances**.

Airport tenants also own and operate USTs and ASTs and are responsible for maintaining them in compliance with Federal and State regulations. A number of USTs will need to be moved or removed as part of the Build Alternatives, and those actions will be accomplished in compliance

with all applicable Federal and State regulations. See **Tables O-2** and **O-3** in **Appendix O**, for a list of all active and inactive USTs and ASTs, respectively at the airport.

Source: Landrum and Brown, Inc. [CCT] 2002. Aerial; Aerial Express, September, 2000

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Locations of Jet A Fuel Storage Facilities

▶ Exhibit 5.19-2

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5.19.3 Alternatives Analysis – Build Out + 5

The following sections present information on the potential environmental impacts on solid and hazardous waste by each of the alternatives retained for detailed evaluation. Only the Build Out + 5 phase is presented because this represents the time at which all components of the Build Alternatives would be completed, operational, and all potential impacts would be realized. In addition, solid waste generated during each of the four future years of analysis for the alternatives (No Action and Build Alternatives) is also presented.

5.19.3.1 Alternative A - No Action

The No Action Alternative (Alternative A) does not include the acquisition of any land. The terminal, surface access, and supporting facilities for this alternative are essentially unchanged from the existing facilities. Therefore no increase in solid waste or hazardous waste would be realized except for the result of projects included in the No Action Alternative. As a result, no significant impacts associated with the generation of solid and hazardous wastes are expected under this alternative.

5.19.3.2 Alternatives C, D, and G

Implementation of Alternative C would result in an increase in solid waste and the handling of hazardous waste.

Impacts of Alternative C would be in the form of construction, demolition and land clearing waste (CDL) and general waste after the completion of construction. CDL debris would include concrete, wood, metal, drywall, roofing materials, glass, and other building materials generated during the demolition of a structure. The same types of materials would be generated during construction, but would include smaller amounts and would be considered scrap. General waste includes non-hazardous and non-recyclable materials generated at the Airport that is similar to household waste. All material that is considered to be solid waste would be disposed of according to all Federal, state, and local regulations. Other materials, such as concrete, metal, glass, and other recyclable materials, would be recycled, if possible.

The amount of solid waste, especially food and container waste would depend on the number of passengers at that time. The more passengers accommodated generally implies that more solid waste will be generated. **Table 5.19-2** lists the solid waste quantities associated with the forecast increase of annual enplanements at O'Hare.

TABLE 5.19-2
SOLID WASTE GENERATED

Solid Waste	Baseline 2002	No Action Alternative (Alternative A)				Build Alternatives (Alternatives C, D, and G)			
		Const. Phase I	Const. Phase II	Build Out	Build Out + 5	Const. Phase I	Const. Phase II	Build Out	Build Out + 5
Tons	11,536	13,467	14,023	15,210	16,721	13,735	14,556	16,326	18,728
(%) Increase from Baseline	N / A	17%	22%	31%	45%	19%	26%	42%	62%

Note: Amount of solid waste generated for the No Action Alternative and the Build Alternatives was calculated using a ratio of 0.7436 pounds of solid waste / enplaned passenger. This ratio was derived using total enplanements and total solid waste generated at the Airport in 2002.

Sources: Crawford, Murphy, and Tilly, Inc. [TPC] analysis, December, 2004.
2002 Baseline: City of Chicago Department of Aviation Waste Management Survey for Chicago O'Hare International Airport, October 2003.
No Action Alternative annual enplaned passengers: Leigh Fisher Associates, Inc. [TPC] Constrained Forecast (see **Appendix B, Aviation Demand Forecast**).
Build Alternatives annual enplaned passengers: Leigh Fisher Associates, Inc. [TPC] Unconstrained Forecast, based upon FAA 2002 Terminal Area Forecast (see **Appendix B, Aviation Demand Forecast**).

All international waste is shipped to Indianapolis, Indiana to be sterilized. Any materials containing international solid waste would be handled as international waste and treated as required by the Federal regulation prior to disposal. The City is developing protocols for ensuring that international wastes are not combined with solid wastes of domestic origin at terminals that handle both international and domestic flights, and for reducing the circumstances under which such combination could occur. International waste resulting from aircraft operations originating in foreign countries, or consisting of a mixture of domestic and international solid waste, is subject to specific handling procedures before being processed for recycling or sent to area landfills.

In general, with the exception of CDL debris, there would be an increase in the level of solid waste generated by the Airport with the proposed alternatives when compared to the No Action Alternative (Alternative A) as can be seen in **Table 5.19-2**.

As part of Alternatives C and D, 62 buildings/facilities located on airport property would need to be demolished. See **Exhibit 5.19-3** for the location of these facilities proposed for demolition. Six additional buildings would be required to be demolished for Alternative G (see **Table 5.20-7** in **Section 5.20, Construction** for a list of facilities scheduled for potential demolition. The City has decided to begin the planning for potential demolition in advance of any FAA Record of Decision. In this regard, inspections were completed on each of the 62 airport facilities proposed for demolition as part of a Phase I Environmental Site Assessment (ESA).[17]

The Airport would comply with all applicable laws and regulations regarding the remediation of any contamination associated with underground storage tanks found during the course of the Phase I investigation.

[17] Phase I Environmental Site Assessment Reports for On-Airport Facilities to be Demolished at O'Hare (3 CDs), Environmental Design International, Inc., received August 2, 2004.

If a Build Alternative is selected, any structure to be demolished or renovated will have all friable asbestos containing materials abated before demolition activities begin. All painted surfaces are assumed to contain lead-based paint, until proven otherwise, and will be disposed of as general construction waste. Materials with lead-based paint may not be blowtorched, sandblasted, chemically stripped, or otherwise handled so as to ensure that the substrate material is disposed of by licensed lead-based paint workers. Any and all abatement procedures for asbestos containing materials and lead-based paint, if needed, would be completed in accordance with all applicable Federal and state rules and regulations.

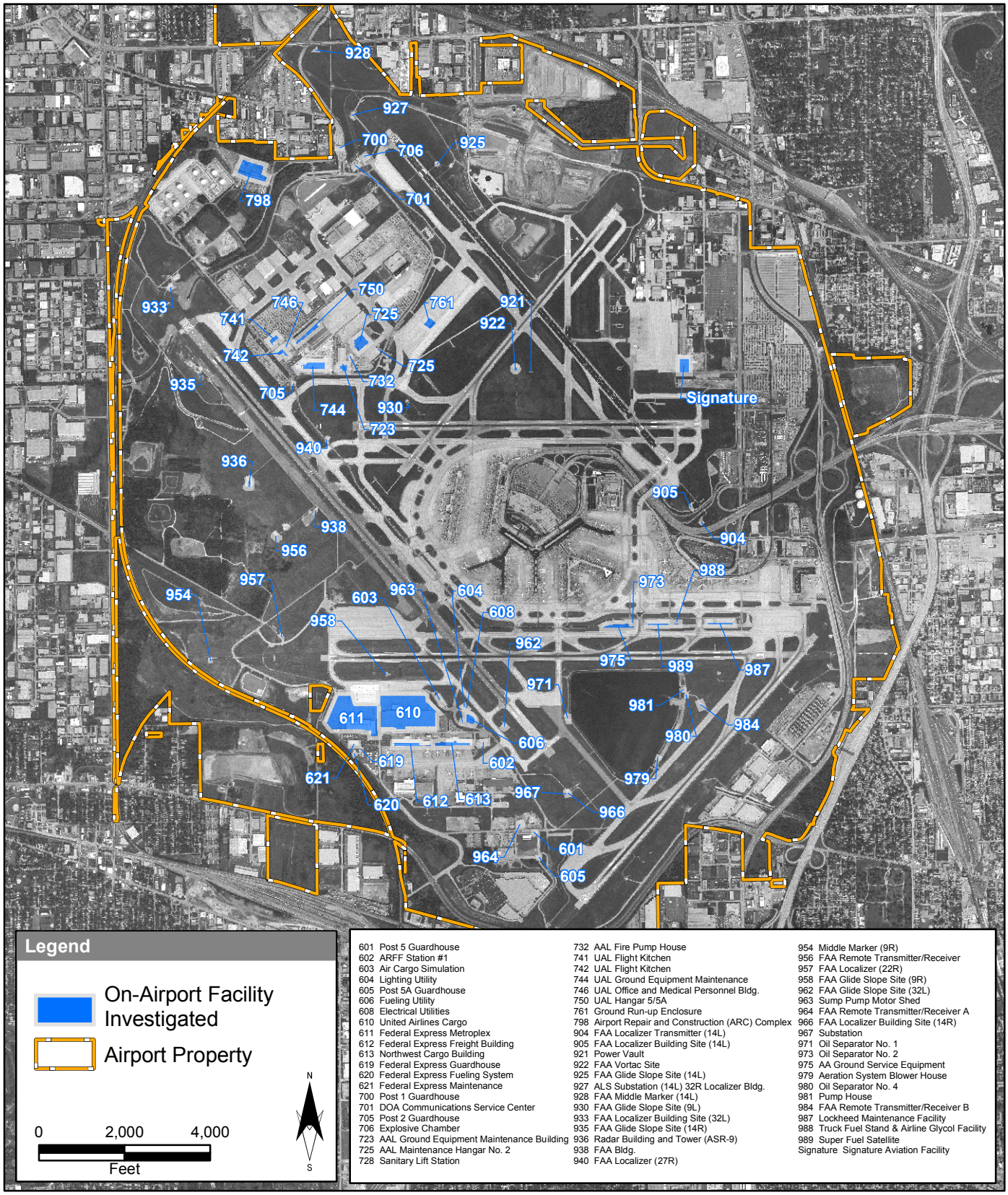
In addition, the FAA is completing Phase I ESA's in accordance with ASTM 1527-2000 and FAA Order 1050.19, *Environmental Due Diligence Audits in the Conduct of Real Property Transactions,* on behalf of proposed offsite navaid locations to assess the presence of "recognized environmental conditions" associated with the prior use of the properties. See **Exhibit 5.19-4,** for the general location of the proposed offsite navaids where Phase I investigations will be completed, and **Appendix O, Solid and Hazardous Waste**, for detailed descriptions of each offsite navaid location that will require a Phase I ESA. Additional environmental investigations may be required to locate and quantify potential subsurface contamination associated with the prior use of the properties. Additionally, Phase I ESA's would be completed for proposed onsite navaid locations, if a Build Alternative is selected.

Phase I ESA's were previously completed on the majority of properties in the potential acquisition areas. As a result of the findings of the Phase I's, some properties were required to have Phase II ESA's completed. The required Phase II ESA would be completed according to ASTM standards prior to construction, as well as the Phase I's yet to be completed on the remaining properties. If during construction a hazardous waste site or materials are discovered, the site and/or disposal of materials will be mitigated/disposed of according to all applicable Federal and state statutes and regulations. In addition, where required, a report will be submitted to the National Response Center.

As with solid waste, the usage and handling of hazardous substances and waste would also increase proportionately with the growth of enplaned passengers. As the amount of passengers increase so will the need for fuel, de-icing mechanisms and other hazardous materials. Many of these substances are stored in storage tanks either above or underground. See **Exhibit 5.19-1** for the location of active USTs and **Exhibit 5.19-2** for the location of fuel storage facilities. These hazardous substances will all be handled according to Best Management Practices as discussed above. A list of all active and inactive underground and above ground storage tanks can be found in **Appendix O**. All Build Alternatives would require the installation of additional tanks both above and underground, as well as the closure and or removal of existing above and underground storage tanks. For example, with Alternative C, new double-walled underground storage tanks would be installed, eight of which are to be installed at the O'Hare West Fuel Farm Facility. The tanks would be installed underground for safety purposes since they would be located on or near the airfield. Illinois state laws require tanks of this nature to provide leak protection, overfill prevention, and corrosion prevention systems. Additionally, the underground storage tanks would adhere to the Office of the State Fire Marshall regulations entitled, *Part 170 - Storage, Transportation, Sale and Use of Petroleum and other Regulated Substances*.

The operation of aircraft requires the storage and use of hazardous materials such as fuel and deicing agents.

Additionally, with Alternative C, the existing six pump pad at the O'Hare West Fuel Farm Facility is scheduled to be replaced with a new primary pump pad that would accommodate twenty new 150 HP, 1000 GPM turbine pumps required to provide 180 PSI at any given fuel hydrant. The handling of fuel and other hazardous materials associated with the installation of the underground storage tanks would require special treatment in accordance with applicable state and Federal laws and regulations. Best Management Practices are utilized when handling hazardous materials to prevent spills or over filling of fuel tanks (see **Appendix Q, Construction,** for detailed information on Best Management Practices at O'Hare). Though, the handling of hazardous material is forecast to increase proportionately with the growth of enplaned passengers, Best Management Practices regarding handling and transporting hazardous materials would be utilized to ensure environmental safety. Implementation of Alternatives D or G would result in an increase in solid waste and the handling and disposal of hazardous materials. The impacts of solid waste and hazardous materials as a result of Alternative D or G would be similar to those described for Alternative C.



Legend

On-Airport Facility Investigated

Airport Property

0 2,000 4,000

Feet

N

S

601 Post 5 Guardhouse
602 ARFF Station #1
603 Air Cargo Simulation
604 Lighting Utility
605 Post 5A Guardhouse
606 Fueling Utility
608 Electrical Utilities
610 United Airlines Cargo
611 Federal Express Metroplex
612 Federal Express Freight Building
613 Northwest Cargo Building
619 Federal Express Guardhouse
620 Federal Express Fueling System
621 Federal Express Maintenance
700 Post 1 Guardhouse
701 DOA Communications Service Center
705 Post 2 Guardhouse
706 Explosive Chamber
723 AAL Ground Equipment Maintenance Building
725 AAL Maintenance Hangar No. 2
728 Sanitary Lift Station
732 AAL Fire Pump House
741 UAL Flight Kitchen
742 UAL Flight Kitchen
744 UAL Ground Equipment Maintenance
746 UAL Office and Medical Personnel Bldg.
750 UAL Hangar 5/5A
761 Ground Run-up Enclosure
798 Airport Repair and Construction (ARC) Complex
904 FAA Localizer Transmitter (14L)
905 FAA Localizer Building Site (14L)
921 Power Vault
922 FAA Vortac Site
925 FAA Glide Slope Site (14L)
927 ALS Substation (14L) 32R Localizer Bldg.
928 FAA Middle Marker (14L)
930 FAA Glide Slope Site (9L)
933 FAA Localizer Building Site (32L)
935 FAA Glide Slope Site (14R)
936 Radar Building and Tower (ASR-9)
938 FAA Bldg.
940 FAA Localizer (27R)
954 Middle Marker (9R)
956 FAA Remote Transmitter/Receiver
957 FAA Localizer (22R)
958 FAA Glide Slope Site (9R)
962 FAA Glide Slope Site (32L)
963 Sump Pump Motor Shed
964 FAA Remote Transmitter/Receiver A
966 FAA Localizer Building Site (14R)
967 Substation
971 Oil Separator No. 1
973 Oil Separator No. 2
975 AA Ground Service Equipment
979 Aeration System Blower House
980 Oil Separator No. 4
981 Pump House
984 FAA Remote Transmitter/Receiver B
987 Lockheed Maintenance Facility
988 Truck Fuel Stand & Airline Glycol Facility
989 Super Fuel Satellite
Signature Signature Aviation Facility

Source: Landrum and Brown, Inc. [CCT] 2004. AerialsExpress, September 2002.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

On-Airport Facility Locations with Completed Phase I Investigations

▶ Exhibit 5.19-3

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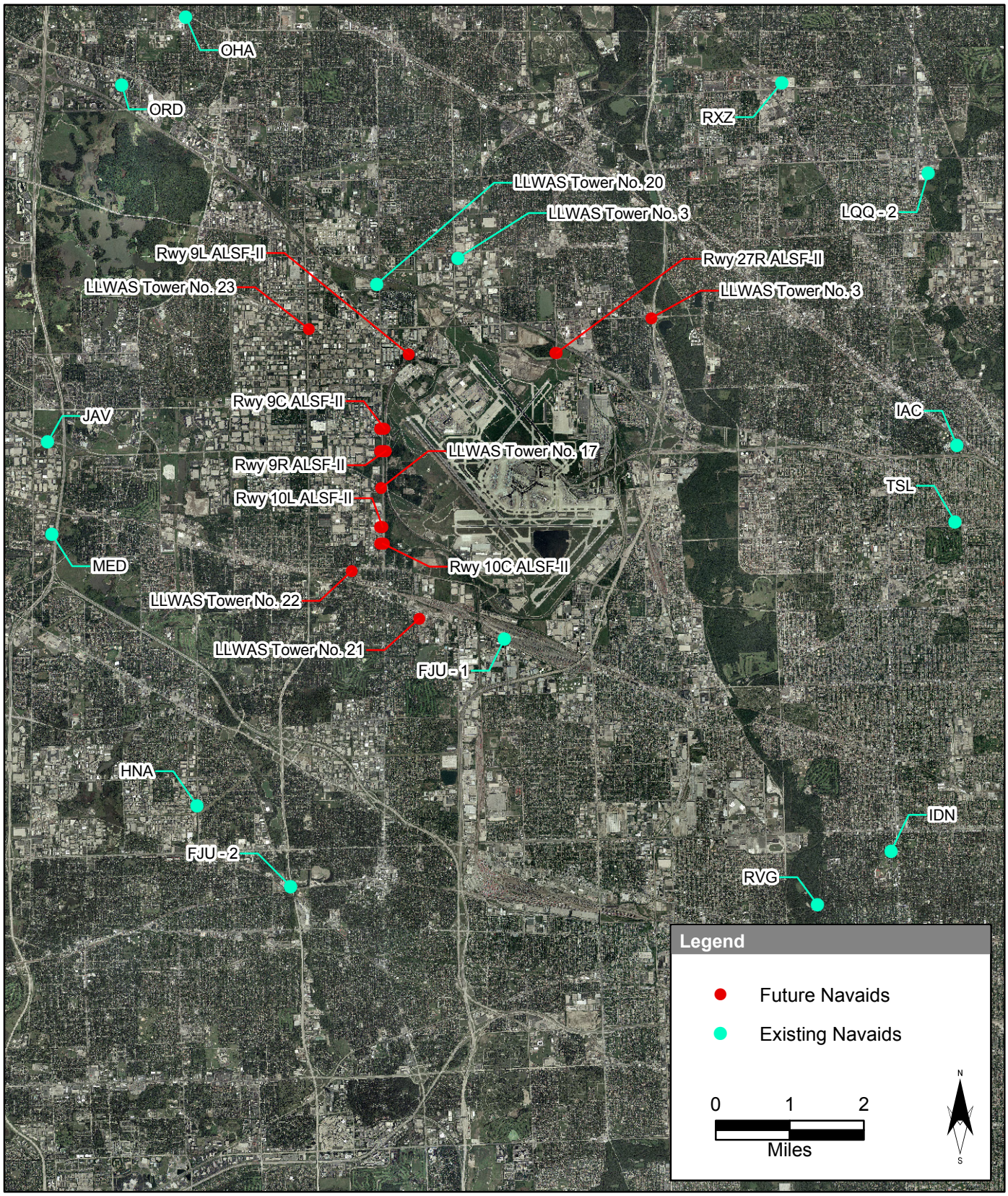

Source: Aerial; Aerial Express, September, 2002

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Off-Airport Navaid Locations for Phase I Investigations

▶ **Exhibit 5.19-4**

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5.19.4 Potential Mitigation Measures

Based on the above analyses, the FAA concludes that no significant impacts related to solid and hazardous waste are anticipated to occur under any of the alternatives. Therefore, no significant mitigation measures are warranted. However, measures such as continuing the recycling program would help to ensure that no significant impacts are realized in the future.

If during construction a hazardous waste site or materials are discovered, the site and/or disposal of materials will be mitigated/disposed of according to all applicable Federal and state statutes and regulations, if a Build Alternative is selected. In addition, where required, a report will be submitted to the National Response Center.

5.19.5 Summary

Under the No Action Alternative (Alternative A), the FAA concludes that no significant impacts related to solid and hazardous waste would occur, since no problems are anticipated with respect to meeting the applicable local, state, Tribal, or Federal laws and regulations. The Airport should continue its recycling program to reduce the amount of solid waste to the greatest extent.

Under the Build Alternatives, the FAA concludes that no significant impacts related to solid and hazardous waste would occur, since no problems are anticipated with respect to meeting the applicable local, state, Tribal, or Federal laws and regulations. Each Build Alternative maintains the same amount of enplaned passengers. Therefore, since the amount of generated solid waste is directly related to the number of enplaned passengers, the amount of solid waste generated for each Build Alternative would be the same. In general, with the exception of CDL debris, there would be an increase in the level of solid waste generated by the Airport with the Build Alternatives when compared to the No Action Alternative (Alternative A), as shown in **Table 5.19-2**.

All state and Federal regulations should be adhered to, as well as the utilization of Best Management Practices, when handling hazardous materials such as fuel and de-icing agents. The installation of any storage tanks, above and underground, will adhere to all state and Federal regulations. Though the handling of hazardous waste is forecast to increase proportionately with the growth of enplaned passengers, Best Management Practices regarding handling and transporting hazardous materials would be utilized to ensure environmental safety.

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